REMARKS/ARGUMENTS

Reconsideration of the application, in view of the above amendments and the following remarks is respectfully requested.

The Examiner rejects claims 1 and 13-14 and 19-20 under 35 U.S.C. § 103(a) as being unpatentable over Hasting in combination with Allison and Kondo. The Examiner states that Hasting discloses the claimed invention [to] a switch mode converter in FIGURE 10 but does not disclose the utilization of the technique for the feedback controller is responsive to the predetermined portion of the cycle of the switching transistor during which the converter is in discontinuous mode. The Examiner states that Allison teaches the utilization of the similar technique for the feedback controller is responsive to the determined portion of the cycle of the switching transistor during which the converter is in discontinuous mode and specifically recites Col. 5, LL 35-40 and Col. 6, LL 10-35. The Examiner concludes that it would have been obvious to one having an ordinary skill in the art at the time the invention was made to modify Hasting converter by utilizing the technique taught by Allison for the purpose of increasing the efficiency of the converter.

This rejection is respectfully traversed. Referring to Allison at Col. 5, LL 35-40, referred to by the Examiner, we see that the description of the boost inductor 42 is:

> "...boost inductor 42 must be sized to result in fully discontinuous current throughout the range of operation from minimum to maximum..." (Emphasis added).

Accordingly, if the Examiner's combination were made, the present invention would always be in discontinuous mode, so there would be no reason to measure the portion of the cycle in which the device is in discontinuous mode, because it is already designed to be in discontinuous mode for 100% of the cycle. Accordingly, the Examiner's rejection must fail. Applicants also respectfully point out that although the Examiner combined Hastings with Allison and Kondo, the Examiner has not explained how Kondo is involved with this three-way combination in Paragraph 3 of the Rejection. Therefore, the Examiner's rejection with respect to Kondo is defective. However, Applicants incorporate herein the comments over both Hasting and Kondo submitted with the Response under 37 C.F.R. § 1.111 mailed on July 14, 2005.

The Examiner rejects claims 15-17 under 35 U.S.C. § 103(a) as being unpatentable over Kondo in combination with L'hermite. The Examiner states that Kondo disclosed a claimed invention as a method for controlling a switching mode converter but does not disclose the utilization of the technique for measuring a discontinuous the amount of time of discontinuous current flow in the inductor. The Examiner states that L'hermite teaches the utilization of the similar technique for measuring a discontinuous the amount of time of discontinuous current flow in the inductor and specifically refers to Col. 7, LL 15-40. The Examiner concludes that it would have been obvious to one of having ordinary skill in the art at the time the invention was made to modify Kondo converter by utilizing the technique taught by L'hermite et al. for the purpose of providing an improved power factor correction circuit.

This rejection is respectfully traversed. The portion of L'hermite et al. cited by the Examiner has a circuit that senses the inductor current and when it goes to zero it turns the switch back on and the on time begins because the changes in mode is based upon the zero crossing. The time measured is not in relation to anything else within the circuit operation, but a simple timing of current goes through zero. It is well known in the art to turn-off the switch based on its zero current crossing, but this is unrelated to determining the portion of the cycle during which a converter operates in discontinuous mode, the Examiner statements to the contrary notwithstanding. Accordingly, Applicant's have not amended Claims 15-17 because no changes are necessary.

The Examiner states that claims 2-12 are objected to as being dependent upon a rejected base claim, would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Accordingly, Applicants have amended Claim 2 to recite the features of Claim 1 in independent form and have amended claims 8, 12, 13 and 14 to be dependent upon Claim 2 instead of Claim 1. Accordingly, these claims should now be allowable. Furthermore, Applicant's bring to the Examiner's attention the fact that the freewheeling diode coupled to the inductor and a discontinuity detector coupled across this diode, which is recited in Claim 2, is also recited in Claim 19. Accordingly, Applicant's submit that if Claim 2 is allowable, then Claim 19 and Claim 20 which depends from Claim 19, should also be allowable.

Accordingly, Applicant's believe that the application, as amended, is in condition for allowance, and such action is respectfully requested.

Respectfully submitted,
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